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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Joseph G. Barrett

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EXAMINER

NGUYEN, VAN KIM T

ART UNIT

PAPER NUMBER

2456

NOTIFICATION DATE

DELIVERY MODE

03/05/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b> 09/666,140	<b>Applicant(s)</b> BARRETT ET AL.	
	<b>Examiner</b> Van Kim T. Nguyen	<b>Art Unit</b> 2456	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4 and 6-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-4, and 6-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>February 17, 2009</u> .                                       | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office Action is responsive to communications filed on December 1, 2008.

Claims 1, 3-4, and 6-45 are pending in the case.

#### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on February 17, 2009 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Response to Arguments***

3. Applicant's arguments filed December 1, 2008 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Eichstaedt is relied upon to show a method and system for monitoring connections transactions between multiple access requestors and an access provider at a switching component (col. 5: lines 32-39; and col. 10: lines 34-43); and denying, at the switch, access by an attacking access requestors (col. 6: lines 43-61; and col. 12: lines 3-20). Short discloses the missing element, i.e., the switching element is a switch (comprising an access concentrator 16, a gateway device 12, a router 18, and a DHCP server 18; col. 6: line 37 – col. 7: line 24).

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 15-37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As presented in the specification, page 5: lines 4-5 and page 6: lines 24-25, it would suggest to one of ordinary skill that all may be reasonably implemented as software routines, therefore, claims 15-37 are rejected as a system of software per se, failing to fall within a statutory category of invention.

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 3-4, 6-39 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichstaedt et al. (U.S. Patent No. 6,662,230), hereinafter Eichstaedt, in view of Short et al.(US 6,636,894), hereinafter Short.

Regarding claims 1, 13, 15, 23, 25, 34, 38-39 and 45, as shown in Figures 1-6, Short discloses:

monitoring a computer system for connection transactions between multiple requestors (12, 14, 16) and an access provider (21) at a switching component (22, 11) connected to the access provider and transfer data to and from the access providers (col. 5: lines 32-39; and col. 10: lines 34-43);

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denying, at the switching component, access by an attacking access requestor (16) to the access provider (21) when a number of connection transactions initiated by the attacking access requestor (e.g., request values) through the switch (11) exceeds a configurable threshold number (e.g., maximum request values) during a first configurable period of time (col. 6: lines 43-61; and col. 12: lines 3-20).

Eichstaedt also discloses the monitoring includes detecting connection transactions between multiple Internet protocol addresses and the access provider with the switching component (Eichstaedt; col. 5: lines 32-39; and col. 7: lines 23-49).

Eichstaedt does not explicitly teach the switching component is a switch and connected to access providers.

As shown in Figure 1, Short teaches a switch (computer system 10 comprising an access concentrator 16, a gateway device 12, a router 18, and a DHCP server 18, all of which can be embedded within a switch; col. 6: line 37 – col. 7: line 24) providing multiple users (14) access to a plurality of networks (22 and 20; col. 6: line 9 – col. 7: line 24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Short's method of providing multiple users access to a plurality of network providers in Eichstaedt's system, motivated by the need of providing users access to the Internet, i.e., a worldwide, publicly accessible network of interconnected computer networks that transmit data, consisting of millions of smaller domestic, academic, business, and government networks.

Regarding claim 3, Eichstaedt-Short also discloses the monitoring further includes counting, using the switch, and comparing the number of connection transactions initiated by the

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access requestors to any of the access providers (e.g., request values) through the switching component (e.g., 22, 11) during the first configurable period of time ( $t_1$ ) to the configurable threshold (e.g., a comparison between the calculated request values and a predefined maximum value is made; Eichstaedt; col. 7: lines 5-49).

Regarding claims 4, 16 and 26, Eichstaedt-Short also discloses:

the monitoring further includes comparing, using the switch, the number of connection transactions initiated by the access requestors through the switch during the first configurable period of time to the configurable threshold number (e.g., a comparison between the calculated request values and a predefined maximum value is made during  $t_1$ ; Eichstaedt; col. 7: lines 5-49); and

denying access by the attacking access requestor to the access providers includes denying, using the switch, access by the attacking access requestor to all of the access providers connected to the switch when the comparison results indicate that the number of connection transactions initiated by the attacking access requestor during the first configurable period of time exceeds the configurable threshold number (e.g., denying access after failing cumulative data check; Eichstaedt, col. 3: lines 3-38 and col. 9: line 2-53).

Regarding claim 6, Eichstaedt-Short also discloses the monitoring further includes counting, using the switch, the number of connection transactions initiated to any of the access providers by the Internet protocol addresses during the first configurable period of time such that the number of connection transactions reflects a cumulative number of connection transactions

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initiated to any of the access providers by the Internet protocol addresses (step 86, Figure 4; Eichstaedt, col. 8: line 56 – col. 9: line 15).

Regarding claims 7, 17 and 27, Eichstaedt-Short also discloses the monitoring further includes:

comparing, using the switch, the number of connection transactions initiated by the internet protocol addresses during the first configurable period of time to the configurable threshold number (e.g., a comparison between the calculated request values and a predefined maximum value is made during first frequency  $t_1$ ; Eichstaedt; col. 7: lines 5-49); and

denying access by the attacking access requester to the access providers includes denying, using the switch, access by the attacking access requestor to all of the access providers connected to the switch when the comparison results indicate that the number of connection transactions initiated by the Internet protocol address associated with the attacking access requestor during the first configurable period of time exceeds the configurable threshold number (step 86, Eichstaedt; Figure 4, col. 8: line 56 – col. 9: line 15).

Regarding claims 8, 18, and 28, Eichstaedt-Short also discloses the monitoring includes monitoring a computer system for connection transaction made using TCP (Short; col. 9: lines 15-25).

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Regarding claims 9, 19 and 29, Eichstaedt-Short also discloses the detecting includes identifying the IP addresses through the use of a header attached to a message representing the connection transaction being detected (Eichstaedt; Figure 4, col. 8: lines 39-55).

Regarding claims 10-12, 20-22, and 30-33, Eichstaedt-Short also discloses that the denying of access includes denying access to the access providers through the switch (e.g., 22, 11) by the attacking access requestor (e.g., 16) for a second configurable period of time ( $t_i$ ) after detecting a most recent connection transaction initiated by the attacking requestor through the switch (Eichstaedt; col. 4: lines 12-17, and col. 7: lines 31-49).

Regarding claims 14, 24 and 35, Eichstaedt-Short also discloses the counting further comprises counting, using the switch, a cumulative number of connection transactions for all of the access providers connected to the switch initiated by each of the access requestors during the first configurable period of time (step 86, Figure 4; Eichstaedt, col. 8: line 56 – col. 9: line 15).

Regarding claims 36, Eichstaedt-Short also discloses a host computer system (e.g., 21) receives communication from the switch (e.g., 22, 11; Eichstaedt, Figure 1).

Regarding claims 37, Eichstaedt-Short also discloses the switch (e.g., 22, 11) is included in a host system (e.g., 21; Eichstaedt, Figure 1).



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Regarding claim 42, Eichstaedt-Short also discloses:

the access provides include a first access provider and a second access provide that different from the first access provider (20, 22; Short, Figure 1);

monitoring for connection transactions between multiple access requestors and access providers using the switching component connected to the access providers includes:

detecting, using the switch, a first number of connection transaction initiated by the attacking access requestor to the first access provider during the first configurable period of time (e.g., monitoring request frequency to a server for a specific client identifier during  $t_1$ ; Eichstaedt; col. 7: lines 5-49), and

detecting, using the switch, a second number of connection transactions initiated by the attacking access requestor to the second access provider during the first configurable period of time (e.g., monitoring request frequency to a server for a specific client identifier during  $t_1$ ; Eichstaedt; col. 7: lines 5-49), and

denying access by the attacking access requestor to the access providers when the number of connection transactions initiated by the attacking access requestors through the switch exceeds the configurable threshold number during the first configurable period of time includes denying access by the attacking access requestor to both the first access provider and the second access provider when a sum of the first number of connection transactions and the second number of connection transactions exceeds the configurable threshold number (perform frequency check and cumulative data check, the client identifier fails and is rejected if the request value exceeds the predefined maxima; Eichstaedt; Figure 4, col. 8: line 56 – col. 9: line 53).

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Regarding claim 43, Eichstaedt-Short also discloses:

detecting, using the switch, the first number of connection transactions initiated by the attacking access requestor to the first access provider during the first configurable period of time includes detecting a first number of connection transactions that exceeds the configurable threshold number during the first configurable period of time (e.g., comparing the calculated request values and a predefined maximum value is made during  $t_1$ , obviously the calculated request value could be any number, i.e., less than, equal or exceed the predefined maxima; Eichstaedt; col. 7: lines 5-49);

detecting, using the switch, the second number of connection transactions initiated by the attacking access requestor to the second access provider during the first configurable period of time includes detecting zero connection transactions initiated by the attacking access requestor to the second access provider during the first configurable period of time (e.g., comparing the calculated request values and a predefined maximum value is made during  $t_1$ , obviously the calculated request value could be any number, i.e., less than, equal or exceed the predefined maxima; Eichstaedt; col. 7: lines 5-49), and

denying access by the attacking access requestor to both the first access provider and the second access provider when a sum of the first number of connection transactions and the second number of connection transactions exceeds the configurable threshold number includes denying access by the attacking access requestor to both the first access provider and the second access provider when the first number of connection transaction exceeds the configurable threshold number and the second number of connection transaction is zero (perform frequency check and

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cumulative data check, the client identifier fails and is rejected if the request value exceeds the predefined maxima; Eichstaedt; Figure 4, col. 8: line 56 – col. 9: line 53).

Regarding claim 44, Eichstaedt-Short also discloses:

detecting, using the switch, the first number of connection transactions initiated by the attacking access request or to the first access provider during the first configurable period of time includes detecting a first number of connection transactions that is less than the configurable threshold during the first configurable period of time (e.g., comparing the calculated request values and a predefined maximum value is made during  $t_1$ , obviously the calculated request value could be any number, i.e., less than, equal or exceed the predefined maxima; Eichstaedt; col. 7: lines 5-49);

detecting, using the switch, a second number of connection transactions initiated by the attacking access requestor to the second access provider during the first configurable period of time includes detecting a second number of connection transactions that is less than the configurable threshold number during the first configurable period of time (e.g., comparing the calculated request values and a predefined maximum value is made during  $t_1$ , obviously the calculated request value could be any number, i.e., less than, equal or exceed the predefined maxima; Eichstaedt; col. 7: lines 5-49), the sum of the first number of connection transactions and the second number of connection transactions exceeding the configurable threshold number (since log entries is based on client identifiers, it is obvious a cumulative request value from a client including connection transactions to all access providers; col. 6: lines 39-61); and

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denying access by the attacking access requestor to both the first access provider and the second access provider when a sum of the first number of connection transactions and the second number of connection transactions exceed the configurable threshold number includes denying access by the attacking access requestor to both the first access provider and the second access provider when the sum of the first number of connection transactions and the second number of connection transactions exceeds the threshold number, even though neither the first number of connection transactions nor the second number of connection transactions exceeds the configurable threshold number (perform frequency check and cumulative data check, the client identifier fails and is rejected if the request value exceeds the predefined maxima; Eichstaedt; Figure 4, col. 8: line 56 – col. 9: line 53).

7. Claims 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichstaedt, in view of Short, as applied to claim 39 above, and further in view of Lin et al (US 6,751,668).

Regarding claim 40, Eichstaedt-Short does not explicitly teach the establishment of a communication link between the attacking access requestor and one of the access providers involving exchange of more than two electronic messages.

Lin discloses establishment of a communication link between the attacking access requestor and one of the access providers involving exchange of more than two electronic messages (e.g., SYN and SYN/ACK; Figure 1, col. 2: lines 2-9).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Lin's method of responding to service attacks in Eichstaedt-Short's system in order to limiting unwanted access to server data.

Regarding claim 41, Eichstaedt-Short-Lin also discloses:

determining, using the switch, that the second configurable time period, has passed without detecting a new connection transaction initiated by the attacking access requestor to any of the access providers through the switching component (e.g., monitoring the rate of receipt of session establishment; Lin, Figure 2: lines 30-43); and

in response to determining at the second configurable time period has passed without detecting a new connection transaction initiated by the attacking access requestor to any of the access providers through the switching component, allowing access by an attacking access requestor to the access providers (e.g., monitoring the rate of receipt of session establishment is less than the MAX\_SESS\_RATE, the state machine moves back to the normal state 202; Lin, Figure 2: lines 30-43).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN KIM T. NGUYEN whose telephone number is (571)272-3073. The examiner can normally be reached on 8:00 AM - 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Van Kim T. Nguyen  
Examiner  
Art Unit 2456

vkn

/Yasin M Barqadle/

Primary Examiner, Art Unit 2456